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Accessing Russian culture online

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are generated from museums scattered across a huge country with diverse collections representing European and national heritage. By using established methods from monitoring European collections, we highlight difficulties, opportunities, and ramifications for online cultural heritage, in a wider European context. We clearly demonstrate that future analysis of cultures for humanities research may be biased towards the corpora of digitized images published online and licensed for free reuse, which may have complex ramifications for the study of Russian cultural heritage, and beyond.

2 Digital Collections in Russian Museums

It is never easy to build a single narrative of museum computing (Parry, 2007). Conflicting forces of building inventories, providing access, managing idiosyncrasies of museum descriptions, and introducing standards of machine-readable metadata mean that the field did not develop in a straightforward mode or a single direction (Parry, 2007). However, this article will demonstrate that Russian museum computing has been more about building inventories than about developing digital collections that can be accessed as large-scale digital image repositories, or the reuse and extension of digital images to provide more advanced digital resources in the humanities, such as digital scholarly editions.¹

From the 1970s, the rationale for museum digitization practices in Russia was quite similar to that in many other countries, being informed by a need for information and collection management so that museum objects would be catalogued and properly conserved (Aseev and Sher, 1983; Chenhall and

Vance, 2010; Williams, 2010; Navarette, 2014). The synergy (or conflict) of keeping inventories and providing access continued in the late 1990s and early 2000s. An important initiative of providing access to Russian museum collections stems from 1997 when the State Hermitage Museum² and International Business Machines (IBM),³ a computational industry partner, launched an important collaboration programme. IBM provided a scanner—then a rare and expensive peripheral—and software, a web application, design, and user interface design for the museum website (Fig. 1), which was launched in 1999 (IBM, 2017). The State Hermitage Museum was unique in developing its digitization programme and publishing collections on its website, as the museum combined the advantages of having dedicated curators to provide metadata, ability to use high-quality digitization technology provided by a commercial company, and IBM technology to develop its website. The interaction of this major museum with large commercial companies was quite typical for a rise of digitization observed in many countries in the 1990s when museums benefited from large-scale applications of technologies and companies could experiment and build their reputation on the achievements (Terras, 2011).

The balance between keeping inventory databases and providing access to collections resulted in building the National Catalogue of the Russian Federation (RF) Museum Collections. Russian government policy related to the need of preserving collections from 1996 onwards (Federal Law number 54-FZ, 1996) was aimed at building the resource (Fig. 2), first as an offline catalogue for inventory purposes and later as a comprehensive open database posted online⁴ (Ministry of Culture of the Russian Federation, 2017b).

The catalogue is supposed to be completed by 2026 when metadata and images for all objects from the RF Museum Collections will be included in the registry and posted online (Ministry of Culture of the Russian Federation, 2017b). Uploading the data is mandatory for all public museums, and the planning/timeline is supposed to be controlled by the Ministry of Culture at the federal level for the most important museums (Ministry of Culture of the Russian Federation, 2017c), and at

the regional level for regional and local museums. The National Catalogue includes three registries. The offline registry of Russian public and corporate museums is maintained as a mandatory list, and private museums can be included on a voluntary basis. The second registry is an offline registry of museum objects for managing acquisition and accession, controlling location and movement. The third registry is the online database mentioned above (Fig. 2). It was developed for research in the humanities and for the general public. The guidelines available on the website of the National Catalogue inform museum professionals that the mandatory data to upload are an image, title (or object type), period, dimensions, accession numbers, classification field from a guideline, property type for a museum object (e.g. federal property), and credit line. This means that the collection management system will not allow the uploading of records without images (Ministry of Culture of the Russian Federation, 2017a). It is not yet a comprehensive database, as it only includes images for 9% of museum objects in the RF Museum Collections so far. This indicates that, to meet legislative requirements from the RF Ministry of Culture, a mass programme of digitization will need to happen across Russia. Consolidated museum activities may result in providing images and metadata to be published in the National Catalogue for the total number of museum objects by 2026, but the quality of images and metadata may suffer (Pravdina and Loshak, 2017).

Beyond the RF catalogue, we analysed the representation of Russian digital collections through international aggregators of content, but there were not vast amounts of Russian content available via these mechanisms, given the overall number of objects contained in these content management systems.⁵ In 2008–09, five Russian museums⁶ expressed their interest in contributing metadata of objects from their online collections to Europeana (Brakker, 2009). Between 2009 and 2011, these museums submitted metadata for 43,839 objects (Brakker and Kuibyshev, 2013). Metadata for more objects was added between 2011 and 2015, and their number was 48,689 at the time of writing this article (Europeana Collections, 2017). Google



Fig. 1 The interface developed in 1999 included the options of viewing collection highlights and browsing the State Hermitage Museum's digital collection. The museum website with a new interface was launched in 2014. Courtesy of State Hermitage Museum



heritage does not have a significant potential to be used for enjoyment, education, and research before 2026 when museum efforts are supposed to be consolidated to provide access to a major part of collections through the National Catalogue of the RF Museum Collections (Ministry of Culture of the Russian Federation, 2017b). This is important when we consider how the humanities develop and what collections inform scholarly results/international perceptions.

3.1 Methodology

The National Catalogue of the RF Museum Collections (Ministry of Culture of the Russian Federation, 2017a) is an initial access point in finding out the scale of museum digitization in various parts of the country, including its remote regions. Our previous article (Kizhner *et al.*, 2016a)

via email by the Office of Provost, Siberian Federal University, to the RF Ministry of Culture. The complete data received as an aggregated spreadsheet for the filled Form 8 nk (RF Ministry of Culture Statistics, 2017) relate to 2,635 museums from every region of the RF.⁹ To the best of our knowledge, these data have not been previously used to study the scope of digitization, either at a regional or at a national level.

The present article studies the uptake of digitization in Russian museums through the statistical reports (Form 8 nk) submitted to the Ministry of Culture from 2,367 museums in 2015.⁸ The annual statistical reports are mandatory for all museums reporting to local municipalities, regional administrations, and the RF Ministry of Culture, in fact for all non-private and non-corporate museums. From these, we can generate the average results for the country and the average results for its eight major geographical regions. This will show the distribution of digitization activities and content across Russia. We aim to contrast the data available with that from the Enumerate project, which is a study of the uptake of digitization across Europe between 2011 and 2015, funded by the European Union (Europeana, 2017), which will allow us to ascertain whether Russian digitization efforts are equivalent to those being undertaken elsewhere. We used the data from the Enumerate Survey of 2015 (Nauta and van den Heuvel, 2015), including 355 museums from 20 European countries.

4 Results

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Fig. 3 The percentage of images in the digital collections (databases) of Russian museums as related to the number of analogue objects in a museum (the average value across Russia is 14%). This clearly shows a difference between the advanced regions in the north-west, with the scope of digitization almost reaching the European level of 31%, and the rest of the country

cultural heritage of Russian provinces is going to be more difficult even when (if) images are available online via the National Catalogue (the museum objects necessary to study the cultural heritage of the country have not been digitized).

The Survey Report on Digitization in Europe (ibid.) demonstrates the perceptions of museum staff regarding the necessity to digitize museum objects. Curators think that 86% of museum collections have to be digitized. This means that historical and cultural information has been digitally reproduced for a third of European museum collections, for the same number of collections in Saint Petersburg and for a much smaller number of collections in Siberia, the Russian Far East, and Volga

District where ethnographic and historical museum repositories obviously represent a great interest.

An interesting and unexpected result was the difference between the scale of digitization in two major cities, Moscow and Saint Petersburg. The percentage of analogue objects with digital images was much higher in Saint Petersburg than the average across Russia and much higher than that in Moscow. A possible explanation of the IBM/Hermitage project started in 1997 (see above) triggering digitization activity in the museum community in Saint Petersburg may be a partial explanation. In addition, a strong uptake of digitization in this region relates to the interaction of the museum community in Saint Petersburg and the Russian

Table 1 The percentage of the analogue collections digitally reproduced and available online in the museums of Saint Petersburg, Moscow, and across Russia

Places	The percentage of the analogue collections digitally reproduced as related to the total number of objects, %	The percentage of digital images posted online as related to the total number of analogue objects, %
The average across Russia	14	1.44
Saint Petersburg	36	0.93
Northwest (Northwestern Federal District)	25	1.32
Ural Federal District	18	3.2
Southern Federal District	16	1.3
Centre (Central Federal District)	11	1.77
Siberian Federal District	11	0.79
Moscow	10	1.28
Caucasus (North Caucasian Federal District)	9	1.16
Volga Federal District	8	1.18
Far Eastern Federal District	6	0.93

Academy of Sciences in the 1970s, followed by collaboration with national and international commercial companies, including IBM, at a major scale, followed by KAMIS: Museum Collections (see above) working in the region.

We can see that digital collections do exist across the country, but their scope varies, and the level of digitization beyond the Northwestern Federal District is much lower compared to the average European level of digitization.

It is especially important to understand a combination of digitally reproduced images and the scope of images posted online (Fig. 4, Table 1). For example, Saint Petersburg with the record level of digitization at 36% makes only 0.93% of the city's analogue collections published online and visible (Fig. 4, Table 1). The Ural Federal District with the level of digitization at 18%, the second highest in the country, provides digital access to 3.2% of its analogue collections. Cultural heritage in this part of the country is the most accessible to online users, while museum collections in Siberian Federal District are least accessible (Fig. 4, Table 1). The effect of invisibility of Siberian museum collections may result in an inadequate impression regarding Siberian cultural heritage. A question 'Do Siberian museums exist as data for the researchers in the humanities' may indeed be asked in this context.

We can see that digital collections of Russian museums mostly exist for inventory purposes. Visibility of Russian digital collections, consequent access to images for scholarly studies, and introduction of Russian cultural heritage to the international cultural discourse depend on the combination of digitally reproduced images and images published online. With numerous international cultural collections available online, a major part of Russia's cultural heritage may be at risk of staying inaccessible for public use and scholarly analysis at national and international levels.

We analysed whether the information on Russian digital collections is provided in English.¹⁰ We compare Moscow, Saint Petersburg, and adjacent regions with provinces demonstrating that digital collections for museums in Siberia, Far East, and the Caucasus are least accessible to international online users. As shown in Table 2, museums in Moscow, Saint Petersburg, and adjacent regions in Northwestern Federal District indeed provide English interfaces. Almost a half of museums in Moscow provide English interfaces, but only a half of them (sixteen museums of twenty-eight) provide several images of museum objects linked to an English interface. Fifteen museums across Russia (0.63% of the total museum number) provide metadata in English. In Moscow, metadata in English is present on the websites of the Pushkin State



Fig. 4 The percentage of digital images posted online as related to the total number of analogue objects. The lowest percentage is observed in Siberia, Far East, and Saint Petersburg. Images of analogue museum objects are under-represented online even in the case they have been digitized. This shows that digitization is mainly conducted for inventory purposes.

Museum of Fine Arts,¹¹ the State Tretyakov Gallery,¹² the Polytechnic Museum,¹³ and Moscow Kremlin Museums.¹⁴ A similar situation of attracting physical visitors and obvious difficulties in accessing online collections is a characteristic of museums in Saint Petersburg. While twenty-five museums in Saint Petersburg provide English interfaces, only three major museums (the Hermitage Museum, Museum of the History of Saint Petersburg, and the State Russian Museum) present metadata in English so that they can be retrieved as separate museum objects by non-Russian speaking users.

Russian museums understand digitization of their collections as the necessary tool of maintaining museum registries for inventory purposes. This is

demonstrated by a dramatic difference between the percentage of digitally reproduced images and images posted online, especially in an advanced region of Saint Petersburg and the Northwestern Federal District.

5 Closed Collections

‘Permissions culture’ (Bielstein, 2006; Whalen, 2009; Petri, 2014; Aufderheide *et al.*, 2016) is a situation when the society expects users to ask for permissions or licences when interacting with visual art in a digital environment. The degree of freedom for this interaction varies in different countries (for example, Aufderheide *et al.*, 2016 discussing

Table 2 Accessibility of online museum collections to international users

Place	Number of museums in the data set	Absolute number of museums with English interfaces/metadata in English	English interfaces (% as related to the total number of museums)	Metadata in English (% as related to the total number of museums)
Saint Petersburg	39	25/3	64.10	7.69
North-West (Northwestern Federal District)	161	29/2	23.18	1.25
Ural Federal District	186	9/1	4.69	0.52
Southern Federal District	151	4/1	2.65	0.66
Centre (Central Federal District)	400	21/1	9.64	0.25
Siberian Federal District	359	5/0	1.39	0
Moscow	64	28/5	43.75	7.81
Caucasus (North Caucasian Federal District)	122	1/0	0.82	0
Volga Federal District	448	13/2	2.42	0.44
Far Eastern Federal District	155	2/0	1.15	0
Total across Russia	2,367	137/15		
The average across Russia			5.78	0.63

Note: Geographical distribution of museums where websites include an English interface and metadata in English as related to the total number of museums in a region.

the limitations of ‘fair use’ implementation in the USA and Wallace and Deazley, 2016 for real-life examples from museums in a number of countries). In Russia, the ‘permissions culture’ is maintained by the legislation of the RF.¹⁵ This means that museums are supported by federal or local Ministries of Culture, and they can claim their rights of being asked for permissions. The State Hermitage Museum allows image reuse for student projects, educational handouts, and doctoral theses, presenting research results at conferences. Publishing your conference slides online will involve asking the museum for permission as if it were a research publication or a commercial product for which a permission or licence is required (The State Hermitage Museum, 2017). Previously, we demonstrated that moving images across platforms and outputs for different research projects, for example to develop scholarship or digital resources in the humanities, may not be possible in Russia, as a permission from a museum tends to relate to a single project, and changing its use will require a new licence (Kizhner *et al.*, 2016b).

Russian museums are not an exception in keeping their collections ‘closed’. A recent study demonstrates that about 80% of museums in a sample of 175 institutions in English-speaking countries (the USA, the UK, Canada, Australia, and New Zealand)

allow image re(use) only on the condition of requesting permissions (Esalieva, 2017). A study of museum reputation (Van Riel and Heijndijk, 2017) features eighteen famous art museums and relates their rankings to the awareness of their existence. When we manually checked the museum websites for the documents on image policies, we found that two-thirds of the museums do not pursue an open access policy (Table 3).

This shows that Russian museums are not the only institutions which prevent their images from being circulated for humanities research or contribution to a new online visual canon (Price, 2009). However, the complex legal framework within the Russian context effectively precludes involvement in the ‘Open GLAM’ movement,¹⁶ where individual institutions within other legal cultural contexts may have a choice whether to engage and prioritize open licensing and online access to digitized content.

6 Limitations

Russian museum collections tend to consist of two parts: the main collection of objects and a smaller ‘research collection’, including analogue copies of objects, supporting documentation, museum library books, plans, and maps ([Ministry of Culture of the](#)

Table 3 A list of eighteen famous museums from a recent study of what influences museum reputation (Van Riel and Heijndijk, 2017) and their reuse policy types

Policy type	Museums
Open access (commercial reuse allowed) for images in the public domain	Metropolitan Museum of Art, National Gallery of Art, and Rijksmuseum
Non-commercial reuse allowed for images in the public domain or where copyright is cleared by a museum	The Louvre, British Museum, and Van Gogh Museum
Personal and educational use, otherwise permitted use only (a fee may apply)	State Hermitage Museum, Musée d'Orsay, Museo del Prado
Permitted use upon request (a fee may apply)	National Gallery, Vatican Museums, Tate Modern, Musée National d'Art Moderne, Reina Sofia, and Museum of Modern Art
Requests to provide images (no fee is applied)	National Art Centre, Japan
No information on policy type	Centro Cultural Banco do Brasil, and Shanghai Museum

Note: Two-thirds of museums in the study do not pursue open access policy.

Union of Soviet Socialist Republics, 1985). While the total number of objects in Russian museum collections slightly exceeds 80 million objects, the number of original objects (including duplicates) is actually 60 million objects. The aggregated results of the statistical surveys (RF Ministry of Culture Statistics, 2017) obtained for the study reported the number of digitized objects as related to the total number of objects in a museum, including their ‘research collections’. This did not create a methodological problem when comparing the results with those from the Enumerate project where the Survey Report on Digitization provided the percentage of digital images for museums’ analogue collections (Nauta and van den Heuvel, 2015, p. 20), but the research collection aspect should be borne in mind when looking at the statistics provided here. We cannot tell which objects were digitized in a given museum, and whether museums preferred to include or exclude the ‘research collection’ from the reported data set. If they did exclude the research collection (which is logically justified), the scope of digitization would be higher, if they did not (which is quite feasible because they may have preferred to report all objects with images), the scope of digitization is equal to that reported in the results section (for the data on the percentage of digitized objects and objects published online as related to the number of original objects, see Table 4).

Another limitation of this study is that we do not consider what digitized content has been

‘cherry-picked’ for online presentation (Besser, 1997), what influences the decision-making of what is being digitized or posted online, and what impact it has on culture perception. We do not consider the quality of images published online, either, leaving aside the question of how quality—whether high resolution, or effective colour management procedures, for example—influences image perception and contributes to maintaining a balance between keeping images under control and providing access that matches users’ expectations given the current online environment.

7 Discussion

Our findings demonstrate that digital collections in Russian museums do exist across the country, in both metadata and digitized content, but we cannot say that their online display is representative enough to cover the culture considering the variety in geography and ethnography. We can roughly confirm our previous results on the percentage of museum objects with corresponding digitized images across the country (Kizhner *et al.*, 2016a) to be in the region of 18%, as our present data show the level of digitization is on average 14% in each museum. However, our previous results might have a sampling bias, as the museums answering the questions of the survey could be interested in digitization *per se* and work towards obtaining more

Table 4 The percentage of the analogue collections digitally reproduced and available online in the museums of Saint Petersburg, Moscow, and across Russia (for collections without supporting documentation and museum library books)

Places	% analogue museum objects with digital images for the main collection (without library books and supporting documentation)	% for the digitized objects published online (without library books and supporting documentation)
The average across Russia	18	2.15
Saint Petersburg	44	1.10
Moscow	12	1.50
Centre (Central Federal District)	14	2.25
North-West (Northwestern Federal District)	33	1.78
Southern Federal District	23	1.84
Caucasus (North Caucasian Federal District)	12	1.50
Volga Federal District	11	1.65
Ural Federal District	25	4.60
Siberian Federal District	16	1.12
Far Eastern Federal District	8	3.16

financial and administrative support to sustain this activity.

Comparing our data with those from the Enumerate project ‘which aimed to survey the extent of digitization across Europe’ (Europeana, 2017) where some survey questions were about the percentage of the analogue collection digitally reproduced (Nauta and van den Heuvel, 2015, p. 20), we can say that the average results of the present study at 14% are much lower than the results of the Enumerate project for 2015 when the percentage of digitized collections in European museums was 31%. The Enumerate project allows comparing data across museums, libraries, and archives, and its Survey Report demonstrates a higher percentage of analogue objects with digital reproductions for museums compared to libraries at 19% and archives at 13% (Nauta and van den Heuvel, 2015). We cannot make a similar comparison across sectors to get a full understanding of digitization activities for Russian cultural heritage due to the lack of data on Russian digital collections in libraries and archives. The results for Saint Petersburg museum collections are higher than the European average (Fig. 3, Table 1). The percentage of images available online across Russia as related to the analogue collection is 1.5% which is lower than the percentage reported by the Enumerate project (24% of digital collections and 7.5% of European

analogue collections). However, the Enumerate results included digital collections and digitally born objects available online, which complicates the comparison (Europeana, 2017). A clear dominance of digital collections in the northwestern part of the country may be partially explained by the existence of a skilled labour pool in this region, the historical links to technical companies, infrastructure, and Western influences. Historical reasons of the influence of museum professionals from Saint Petersburg, the centre of the Northwestern District, including their links to major international and national companies, such as IBM and KAMIS: Museum Systems, are also important.

It would be indeed tempting to position the Northwestern Federal District as an island of digitization efforts. What is strikingly incompatible with this argument is the ratio of images of museum objects posted online. The figure is 1.32% for the Northwestern Federal District and even lower (0.93%) for Saint Petersburg, almost twice as low as the average across Russia at 1.44%. The figure is equal to the percentage of images posted online in the Far East (Fig. 4, Table 1). While the objects are being digitized, those images are not being posted online, in an overturning of the open data principles that we are seeing being uptaken across Europe and America (Boyle, 2010; Borgman, 2015; Terras, 2015; European Commission, 2016). A possible

explanation could be that major museums in Moscow and Saint Petersburg have huge collections with millions of objects. Another explanation might be an argument of attracting visitors to physical museums. This is quite consistent with a high number of websites with English interfaces—museum administrators might want an English interface to attract the international public to a physical museum.¹⁷ The websites with metadata in English are available for some of the most important museums with famous collections featured in printed international sources (the State Tretyakov Gallery, the State Russian Museum, and Moscow Kremlin Museums), European paintings from the Hermitage Museum, and the State Museum of Fine Arts in Moscow.

Starting from the 1980s, influencing content selection for what can be digitized and included in a database was an issue that significantly affected this early work. The Hermitage Museum's senior management was much interested in building a collection management system for the museum's collection of European paintings (Sher, 2006). Their intention to transfer famous works from printed materials to digital collections can be easily explained and understood in terms of promoting the State Hermitage Museum as an institution that keeps and maintains European core values. Another possible explanation of keeping online museum images within a printed canon may be the feeling of control, a concept discussed in the context of licensing images by American museums in the early twenty-first century (Kelly, 2013). The feeling may be quite common all over the world, and Russian museums may not be an exception. Challenging 'permissions culture' in visual art (Bielstein, 2006) and relying on public domain images to be published without restrictions (Petri, 2014), as it happens in several museums across the world (Aufderheide *et al.*, 2016), have been complicated by a strong opposition of museum gatekeepers when museums assume that 'permissions are inevitably required' (Aufderheide *et al.*, 2016, p. 3). Russian museums are supported in these assumptions by the RF legislation¹⁸ (Kizhner *et al.*, 2016b).

The National Catalogue of the RF Museum Collections is supposed to include records with

images from all museum collections in the RF except private museums by 2026 (Ministry of Culture of the Russian Federation, 2017b). We can only hope that the Catalogue can meet its planned target figures within a reasonable period. If it does so and if Russian digital policies change to allow openly licensed content and content repurposing, then Russian cultural heritage will be accessible to a wider national and international user base. If it does not, then Russian cultural heritage will not have adequate representation in online cultural heritage resources, and this could lead to insufficient knowledge about the country's cultural heritage on a global scale in an age when countries compete for better visibility through digital media.

8 Conclusion

Our novel contribution is in comparing the scope of museum digitization in Russia with the scale of digitization in Europe (using Nauta and van den Heuvel, 2015, as an example). Our findings clearly demonstrate that the scope of digitization is lower than in Europe: the number of images posted online does not contribute to building a clear picture of Russian cultural heritage, and the information on Russian museum collections is not accessible to the international audience as few museums publish metadata in English or have English interfaces beyond a few famous museums. This is the case despite important historical developments and significant initiatives in museum computing scattered across the country. Our results challenge the perception of museum collections across the world as 'visible and easily accessible' (Salamon-Cindori *et al.*, 2014). Increased access at a European level prevented only by technical or copyright issues (Taylor and Gibson, 2016) does not mean it has been achieved worldwide. Although much is known about a group of museums with a large share of their collections published online (Aufderheide *et al.*, 2016) or European museums that have digital collections (Nauta and van den Heuvel, 2015), further research is needed to find out the share of museums at an international scale that are indeed able to contribute to disseminating

the information on cultural heritage through their digital platforms.

If non-Western collections will continue to stay invisible and inaccessible, building an art historical corpus (Drucker, 2013) and applying ‘data science’ to visual analysis in art history (Manovich, 2015) will be restricted to Western museum data. Further steps of data simulation, dimension reduction, and extracting new, unexpected dimensions from large sets of visual data (Manovich, 2016) will be limited by accessible data sets, and the analysis will be, obviously, biased towards the represented heritage characteristics of the Western culture.

The sheer magnitude of digitization efforts in creating open archives, a road taken in Europe and elsewhere, demands intertwining digitization efforts and research on artistic canon evolution in a digital era. Eventually, the cultural biases of the twentieth century that are rooted in the colonial and political attitude of the nineteenth century (Said, 1993) will be substituted by the attitudes of the generations from the twenty-first century. Harnessing the culture of remix (Lessig, 2008) and introducing careful attitudes to what is used and reused to build a new perception of culture suggest that further research is needed on how a future digital canon is created or how it may differ from printed publications. Who decides what is being digitized, posted online, easily retrieved, and linked to further knowledge is an important research question to arm further studies (and, indeed, it would be useful to carry out equivalent studies comparing the results of the Enumerate study to museum digitization activity in other geographical areas, to be able to assess the predicted dominance of European and North American digital culture online).

This article presents the first view on the state of Russian digital collections on a national scale and regional scales, reporting on the scale of digitization for major geographical regions within Russia. By doing so, we can challenge the concept of the digital canon and claim that the printed canon should be essentially extended within the digital space. Our research supports recent criticism of digitization that is not accompanied by thematic context and

that is strong enough to generate added knowledge in the humanities (Hitchcock, 2013, Gregory *et al.*, 2016). In the Russian context, the delay of digitization and online publishing may be exploited to build a network of historically meaningful context that gradually introduces masterpieces and artworks from a variety of regional/social contexts and links them together. National programmes are needed to introduce recommendations on how Russian museum websites and/or the National Catalogue of the RF Museum Collections should host images for searching and browsing to provide infrastructure that can assist humanities research, and what the ramifications of not meeting the deadlines for providing a Russian-wide catalogue of museum objects will be, given no mass digitization programme exists, or is resourced, there. Future research may be also needed to find out the scope and reach of digitization in the library and archive sector in the RF to further understand how the national cultural heritage may be accessed by a wider audience. The task of building inventory databases to get rid of the burden of clerical chores may be just an initial step towards reaching significant economic, social, and cultural impact (Drucker, 1967, Gooding *et al.*, 2013). Only by extending the scope and reach of digitization of cultural and heritage collections in Russia, can they become accessible to both national and international audiences.

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Notes

- 1 A complicated task that has been rarely achieved for textual materials and requires sophisticated training in editing skills and knowledge of the history of book (McGann, 2013). A recent study shows that there are only about 300 digital scholarly editions worldwide (Franzini *et al.*, 2015).
- 2 <https://www.hermitagemuseum.org/wps/portal/hermitage/>
- 3 <https://www.ibm.com/us-en/>
- 4 At the time of writing, the catalogue is available in Russian at <http://goskatalog.ru/portal/#/>
- 5 At the time of writing, there are 51 million objects in Europeana Collections (Europeana Collections, 2017).
- 6 The State Tretyakov Gallery <https://www.tretyakovgallery.ru/en/>, Saratov State Museum of Fine Art <http://artkatalog.radmuseumart.ru/en/>, Rybinsk Museum (near Yaroslavl) <http://www.rybmuseum.ru/en/>, Chuvash State Museum of Fine Art <http://www.artmuseum.ru/museumexpo/>, and Kazan University Museum <http://kpfu.ru/eng/about-the-university/museums-and-library/the-museum-of-history-of-kazan-university/exhibition-halls>. It should be noted that four museums on the list provide interfaces in the English language and are obviously interested in visibility/access to their collections at an international level.
- 7 <https://www.google.com/culturalinstitute/beta/?hl=ru>
Google Arts and Culture is a digital collection of museum objects initiated by Google and launched in 2011 as an online platform to provide access to high-resolution images of artworks.
- 8 The RF Ministry of Culture introduced national statistics related to museums (Form 8 nk) in 2003. Form 8 nk for 2017–18 is available on the website of the RF Ministry of Culture Statistics (RF Ministry of Culture Statistics, 2017).
- 9 The form includes thirty-six fields, and the data are annually submitted to the RF Ministry of Culture. The fields cover the information on the type of museum (public or private), the type of museum object property (federal, regional, or municipal), the number of objects exhibited in the museum space, the number of objects that can be physically accessed by the blind and visually impaired, the number of

museum objects requiring conservation, the number of objects cleaned, repaired, and stabilized in the reported year, the number of museums with electronic inventories, the number of museums with the Internet access, etc.

- 10 English has been long considered a global language
(Crystal, 1997) or ‘today’s dominant language of science’ (Ammon, 2001, p. v). There is some evidence supporting the claim that search engines favour pages in English giving them a priority in rankings (Al-Eroud *et al.*, 2011).
- 11 <http://www.arts-museum.ru/?lang=en>
- 12 <https://www.tretyakovgallery.ru/en/>
- 13 <https://polymus.ru/eng/>
- 14 <http://www.kreml.ru/en-Us/museums-moscow-kremlin/>
- 15 Federal Law number 54-F3, 26 May 1996 on Museums and Museum Collections in the RF, amended in 1996, 2003, 2004, 2008, 2010, 2011, 2014, and 2016. Article Number 36 states that copying museum products is impossible without a written permission from

museum administration. The second law regulating, in particular, image reuse is 'Basic Legislation of the RF on Culture' number 3612-1, 9 October 1992, amended in 2017. Article Number 53 states that companies and public institutions can use the images of cultural heritage objects only with the permission of an object owner. Because the owner is either the RF or a region within the RF in the case of public museums, the owners' rights are looked after by either federal or regional Ministries of Culture (Federal Law number 54-F3, 26 May 1996, Article Number 4).

- 16 <https://openglam.org>
- 17 Of course, major British and US galleries, libraries, archives, and museums do not provide interfaces in languages other than English. See, for example, the website of the Metropolitan Museum <https://www.metmuseum.org> or Tate Britain <http://www.tate.org.uk/visit/tate-britain>
- 18 Federal Law number 54-F3, 26 May 1996 on Museums and Museum Collections in the RF, amended in 1996, 2003, 2004, 2008, 2010, 2011, 2014, and 2016.